

CONFORMANCE TESTING FOR 49 CFR 537 AUTOMOTIVE FUEL ECONOMY REPORTS

HYUNDAI MOTOR COMPANY
2015 HYUNDAI GENESIS
FOUR-DOOR PASSENGER CAR
NHTSA NO. C20154202

U.S. DOT SAN ANGELO TEST FACILITY
131 COMANCHE TRAIL, BUILDING 3527
GOODFELLOW AFB, TEXAS 76908



May 4, 2015

FINAL REPORT

PREPARED FOR

**U. S. Department of Transportation
National Highway Traffic Safety Administration
Enforcement
Mail Code: NVS-220, Room W43-481
Office of Vehicle Safety Compliance
1200 New Jersey Avenue, SE
Washington, D.C. 20590**

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16. Abstract Conformance validations were conducted on the subject 2015 Hyundai Genesis four-door passenger car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. DRAFT-TP-537-02 to verify the vehicle's footprint data versus the manufacturer's data in its report pursuant to 49 CFR 537, Automotive Fuel Economy Reports. The test non-conformances were as follows: NONE.		
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SECTION 1

PURPOSE OF CONFORMANCE VALIDATION

1.1 PURPOSE OF CONFORMANCE VALIDATION STATEMENT

A 2015 Hyundai Genesis four-door passenger car was tested to determine if the vehicle was in conformance with the requirements of 49 CFR PART 537. All tests were conducted in accordance with NHTSA/Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure DRAFT-TP-537-02, dated May 23, 2014.

1.2 TEST VEHICLE

The test vehicle was a 2015 Hyundai Genesis four-door passenger car. Nomenclatures applicable to the test vehicle are:

A. Vehicle Identification Number: KMHGN4JE8FU035819

B. NHTSA Number: C20154202

C. Manufacturer: Hyundai Motor Company

D. Manufacture Date: 07/2014

1.3 TEST DATE

The test vehicle was tested April 21, 2015.

SECTION 2

TEST PROCEDURE AND DISCUSSION OF RESULTS

2.1 TEST PROCEDURE

Prior to test, the test vehicle, at its unloaded vehicle weight condition, was inspected for completeness, systems operability, and appropriate fluid levels, i.e. fuel, oil and coolant. The vehicle was then photographically documented as required by the NHTSA/OVSC Test Procedure.

Subsequent events included:

Any possible test obstructions were removed prior to obtaining any test measurements and the vehicle's tire pressures were adjusted, if necessary, to the cold tire pressure indicated on the vehicle Placard or Tire Information Label. The test vehicle was positioned on a clean level surface. The surface was verified to be level within the specifications on all sides of the vehicle (front, rear and both sides).

Track Width measurements were obtained with the use of Tire Edge Determination Tools (TEDTs) and 2000 mm rulers. Each of the four TEDTs was properly positioned on the left side of four vehicle tires. The distances were measured between the left edges of the TEDTs on front of the tires and on the rear of tires. The front and rear axles were both measured and recorded. This was then repeated with the TEDTs on the right side of the tires. The four required measurements from the front axle were used to calculate the front axle track width. The four required measurements from the rear axle were used to calculate the rear axle track width. The vehicle track width was calculated as the average of the front and rear track widths. All three average track width values were recorded.

The Vehicle Wheelbase was obtained using a steel metric tape measure and measurements taken from both sides of the vehicle. Two measurements were taken on each side of the vehicle to determine the wheelbase value for that side of the vehicle. One wheelbase measurement was taken from the forward most edge of the front wheel rim to the rearward most edge of the rear wheel rim. The second wheelbase measurement on the same side of vehicle was from the rearward most edge of the front wheel rim to the forward most edge of the rear wheel rim. This side's wheelbase was calculated by averaging the two measured distances. This was repeated for the opposite side of the vehicle. The vehicle wheelbase was calculated as the average of the left and right side wheelbases. These values were recorded.

The Vehicle Footprint is determined by a calculation consisting of the Vehicle Wheelbase multiplied by the Track Width.

The results of this test are compared with the Program Model Year (PMY) Report utilizing the program tolerances. If the vehicle is found to be within tolerances, testing will be concluded. Additional testing, if required, will repeat test procedures.

2.2 Discussion of Results

The data indicate conformance of the Hyundai Genesis with all requirements of 49 CFR PART 537.

SECTION 3
TEST DATA

49 CFR 537– TEST DATA SUMMARY

TEST DATE: April 21, 2015 LAB: U.S. DOT San Angelo Test Facility
 VEHICLE NHTSA NUMBER: C20154202 MY/MAKE/MODEL: 2015 Hyundai Genesis

DATASHEET – 1 of 3 Test Vehicle Manufacturer’s Reported Information

Field Data	
MY	2015
Make	Hyundai
Model	Genesis
Body Type	Four-door sedan
VIN	KMHGN4JE8FU035819
Stock No.	C20154202
Engine Type/Displacement	3.8L V6
Transmission Class	8 speed automatic
Drive System	Rear wheel
	Front and Rear Axles
Tire Manufacturer/Model	Hankook Ventus S1 noble ²
Tire Size	P245/45R18
Mileage	156
Fuel	Full
Adjusted Tire Pressure to conform (Y/N)	Yes

Label Data		
Monroney Label	Front Axle	Rear Axle
Tire Size	P245/45R18	P245/45R18
Manufacturer Certification Label	Front Axle	Rear Axle
Tire Size	N/A	N/A
GAWR (kg)	1,230	1,325
GVWR (kg)	2,440	
Tire Placard	Total	Front Rear
Seat Capacity	5	2 3
Tire Size	245/45R18	245/45R18
Required Tire Pressure (PSI)	33	33
Vehicle Capacity Weight (kg)	410	

Dealer Information	
Dealer Name	Fuccillo Hyundai of Syracuse
Address	Syracuse, New York 13224

49 CFR 537– TEST DATA SUMMARY

TEST DATE: April 21, 2015 LAB: U.S. DOT San Angelo Test Facility

VEHICLE NHTSA NUMBER: C20154202 MY/MAKE/MODEL: 2015 Hyundai Genesis

DATASHEET – 2 of 3 Test Data

Track Width				
Ruler Offset (mm)	<u>250</u>	Test 1	Test 2	Test 3
Front Left Tire Front Measure (mm)		1,628	1,629	
Front Left Tire Rear Measure (mm)		1,634	1,633	
Front Right Tire Front Measure (mm)		1,628	1,629	
Front Right Tire Rear Measure (mm)		1,634	1,633	
Calculated Front Axle Track Width (mm/in)		1,631/64.21	1,631/64.21	
Rear Left Tire Front Measure (mm)		1,662	1,662	
Rear Left Tire Rear Measure (mm)		1,665	1,665	
Rear Right Tire Front Measure (mm)		1,662	1,662	
Rear Right Tire Rear Measure (mm)		1,665	1,664	
Calculated Rear Axle Track Width (mm/in)		1,664/65.49	1,663/65.48	
Average Front/Rear Axle Track Width (in)		64.9	64.8	
Wheelbase				
Left Side OUT-OUT (mm)		3,505	3,506	
Left Side IN-IN (mm)		2,512	2,511	
Calculated Left Side Wheelbase (mm)		3,009	3,009	
Right Side OUT-OUT (mm)		3,502	3,504	
Right Side IN-IN (mm)		2,511	2,511	
Calculated Right Side Wheelbase (mm)		3,007	3,008	
Average Left/Right Wheelbase (in)		118.4	118.4	
Footprint				
Calculated Footprint (sq. ft.)		53.3	53.3	

49 CFR 537– TEST DATA SUMMARY

TEST DATE: April 21, 2015 LAB: U.S. DOT San Angelo Test Facility
VEHICLE NHTSA NUMBER: C20154202 MY/MAKE/MODEL: 2015 Hyundai Genesis

DATASHEET – 3 of 3 PMY Data and Test Results

Surface Measurement (less than 2 degrees)

Front Bumper	<u>0.05°</u>	Rear Bumper	<u>0.05°</u>
Left Sill	<u>0.0°</u>	Right Sill	<u>0.05°</u>

PMY DATA	Front & Rear Axles
Base Tire Size	P235/45R19
Front Track Width (in)	64.1
Rear Track Width (in)	65.3
Average Track Width (in)	64.7
Wheelbase (in)	118.5
Footprint (sq. ft.)	53.2

Comparison Chart (Test Values +/-0.15)	Y/N
Does test 1 indicate conformance?	<u>Y</u>
If applicable:	
Are tests 1 & 2 comparable?	<u>Y</u>
Are tests 2 & 3 comparable?	<u> </u>
Are tests 1 & 3 comparable?	<u> </u>
Are test(s) in tolerance with PMY?	<u>Y</u>

	Test 1	Test 2	Test 3
Front Track Width (in)	64.21	64.21	
Rear Track Width (in)	65.49	65.48	
Average Track Width (in)	64.9	64.8	
Wheelbase (in)	118.4	118.4	
Footprint (sq. ft.)	53.3	53.3	

Tolerances

Front Track Width ± 0.3 in
Rear Track Width ± 0.3 in
Average Track Width ± 0.3 in
Wheelbase ± 0.2 in
Footprint ± 0.2 sq. ft.

The tolerances include the manufacturer's design and manufacturing tolerances. If the manufacturer has not provided tolerances, OVSC may assign default values based upon the result of measured vehicles.

Test Conductor: Anthony Walden Date: April 21, 2015
Test Conductor: Jack Stewart
Approved: Ken Yates

SECTION 4
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

EQUIPMENT	DESCRIPTION	MODEL/SERIAL NO	CAL.DATE	NEXT CAL. DATE
THERMOMETER	FLUKE 179 TRUE RMS MULTIMETER	SERIAL # 84740316	4/15/2015	4/15/2016
AIR PRESSURE GAUGE	ASHCROFT GENERAL PURPOSE DIGITAL GAUGE	MODEL #DG2551L2NAM02L 100#-XCA 100 PSI SERIAL #3093017001	11/18/2014	11/18/2015
RULERS	2000 mm W/STOPS		N/A	N/A
TREAD EDGE DETERMINATION TOOLS (TEDTS)	30" x 4" x 4" MACHINED I-BEAM WITH A 16" X 1" NOTCH ON BOTTOM FLANGE		N/A	N/A
RULER	STANLEY CARPENTER SQUARE		N/A	N/A
LEVEL	STABIL ELECTRONIC	196-2E	11/19/2014	11/19/2015
TAPE	WESTWARD 26' MEASURING		N/A	N/A

SECTION 5
PHOTOGRAPHS




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FIGURE 5.1
LEFT SIDE OF VEHICLE THREE-QUARTER VIEW



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FIGURE 5.2
VEHICLE CERTIFICATION LABEL



TIRE AND LOADING INFORMATION

RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT

SEATING CAPACITY NOMBRE DE PLACES	TOTAL 5	FRONT AVANT 2	REAR ARRIÈRE 3
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The combined weight of occupants and cargo should never exceed 410 kg or 904 lbs.
 Le poids total des occupants et du chargement ne doit jamais dépasser 410 kg ou 904 lb.

TIRE PNEU	SIZE DIMENSIONS	COLD TIRE PRESSURE PRESSION DES PNEUS À FROID	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION VOIR LE MANUEL DE L'USAGER POUR PLUS DE RENSEIGNEMENTS
FRONT AVANT	245/45R18	230kPa, 33psi	
REAR ARRIÈRE	245/45R18	230kPa, 33psi	
SPARE DE SECOURS	T135/80R18	420kPa, 60psi	

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FIGURE 5.3
 VEHICLE PLACARD



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FIGURE 5.5
TIRE EDGE DETERMINATION TOOLS POSITIONED
WHEN MEASURING RIGHT FRONT TRACK WIDTH



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FIGURE 5.6
FRONT RIGHT TIRE FRONT MEASUREMENT



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FIGURE 5.7
FRONT RIGHT TIRE REAR MEASUREMENT



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FIGURE 5.8
TIRE EDGE DETERMINATION TOOLS POSITIONED
WHEN MEASURING LEFT FRONT TRACK WIDTH



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FIGURE 5.9
FRONT LEFT TIRE FRONT MEASUREMENT



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FIGURE 5.10
FRONT LEFT TIRE REAR MEASUREMENT



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FIGURE 5.11
TIRE EDGE DETERMINATION TOOLS POSITIONED
WHEN MEASURING RIGHT REAR TRACK WIDTH



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FIGURE 5.12
REAR RIGHT TIRE FRONT MEASUREMENT



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FIGURE 5.13
REAR RIGHT TIRE REAR MEASUREMENT



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FIGURE 5.14
TIRE EDGE DETERMINATION TOOLS POSITIONED
WHEN MEASURING LEFT REAR TRACK WIDTH



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FIGURE 5.15
REAR LEFT TIRE FRONT MEASUREMENT



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FIGURE 5.16
REAR LEFT TIRE REAR MEASUREMENT



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FIGURE 5.17
MEASURING VEHICLE RIGHT SIDE
WHEELBASE INSIDE EDGE TO INSIDE EDGE



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FIGURE 5.18
MEASURING VEHICLE LEFT SIDE
WHEELBASE OUTSIDE EDGE TO OUTSIDE EDGE